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## PROVISION FOR THE SAFETY OF EMPLOYEES<sup>1</sup>

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**F**OR a long time our prayers have besought the Lord to deliver us from wars and pestilence and sudden death. At last we are doing our own part toward such deliverance by peace foundations, medical and sanitary research, and the prevention of accidents. Time was when even the most humane employers paid small heed to the prevention of accidents. Exposed set-screws and unguarded gears were so much a matter of course that little effort was made to eliminate these constant sources of danger; they were looked upon as "risks of the trade." In industries such as the making of steel the temper of the time was a courage often akin to recklessness. It took men who had the courage to take chances to put this country first among the steel-making nations of the world and to create in fifty years an industry which now employs nearly half a million men and produces each year ten hundred million dollars' worth of the material most essential to our civilization. Over and over again these men risked all they had in the world, lost everything, and afterwards won back more than ever. In the midst of business depressions they built more mills and furnaces against a return of good times. If one built furnaces with a capacity of fifty tons a day, his neighbor tried a capacity of a hundred tons; and now the modern furnace makes seven hundred tons of iron in a single day. Engineers who designed cranes that would lift fifty tons are now building cranes which lift two hundred tons. I very well remember an expression used the first time I saw an ore ship unloaded. The great "bucket" descended swiftly into the hold of the ship with the operator riding in the "boot" above it; the huge jaws bit into the cargo of ore; and in a moment it rose again, carrying fifteen

<sup>1</sup> Read at the meeting of the Academy of Political Science, November 11, 1911.

tons from ship to stock pile. The young engineer beside me said: "I tell you, that's *bold* machinery!" And it was "bold," because its power, beyond control for a single instant, might sink the ship and kill the men about it. That piece of machinery and the most important machinery and methods in the making of steel to-day were planned in the minds of bold men. If these men sometimes allowed dangers to exist where safeguards are used to-day, we must not forget that they were pioneers developing an industry. They were doing in fifty years what might well have taken two hundred. A period of such tremendous development was not a time when caution would have advanced the interests of this country. Discoverers and pioneers have always been renowned for their courage rather than their caution.

We are now in a period when attention everywhere turns to conservation, conservation of timber, of coal, of ore, of the soil—and conservation of human life, which is the chief end of all other conservation. The need for the conservation of human life in this country was shown some years ago when investigators informed us that the number of people killed and injured in accidents in this country each year reached nearly half a million. No small proportion of this tremendous annual toll was made up from work accidents. Unquestionably, this country paid a heavy price in injuries and death for the great and rapid development of its industries. One might paraphrase a single word in a line from Kipling and say:

"If blood be the price of industry,  
Lord God, we have paid it in!"

Speaking roughly and without exactness, investigations of industrial accidents several years ago indicated that about one third of these accidents were caused by some fault of the employer, another third by faults of the employes, and the remaining third by happenings for which neither employer nor employes were to blame. Under an outworn system of legal responsibility for those accidents only in which the employer was to blame, the employer naturally said: "I am not responsible for more than a third of these accidents; therefore I am

not to blame for the conditions which exist." He had been taught to think in obsolete terms. It was necessary that he learn a new theory, that all work accidents are a proper charge against the industry in which they occur, irrespective of whose fault occasioned them. Under such a theory the employer must say to himself: "I can surely prevent nearly all the accidents due to any fault of my own; I can probably so train my employes as to eliminate most of the accidents which are due to faults of theirs: and I can perhaps avoid many of the accidents for which neither employers nor employes are to blame." Only with the coming of that attitude on the part of employers will there come effective prevention of accidents.

I have expressed the opinion that our laws relating to work accidents were hopelessly outworn. I think that was proved by the fact that only one man out of every four or five injured established his legal right to relief; that only a third of what was spent by the employers reached the injured men and their families; and that from the moment of injury employer and employe were hopelessly estranged by antagonism, suspicion and distrust at the very moment when they ought to have been drawn together. To-day we are in the midst of a transition to some better system. Already ten states are trying different plans of workmen's compensation. All but one or two have refused to adopt the unfair terms of the British act under which workmen are allowed to choose after injury whether they will accept the benefits of the act or sue their employers. Because this vicious doctrine was one of the provisions of the New York act which was declared unconstitutional, I think we should be glad our first workmen's compensation act was not allowed to stand as a model for other states. Some of those which are on trial seem to me bound to fail. I am convinced that any such form of state insurance as Ohio is trying will bankrupt any state and permit such lavish expenditure of enormous sums that the industries of the state cannot stand the burden, and the people will not stomach the abuses sure to follow. I think the greatest danger of state insurance is its tendency to discourage the prevention of accidents by relieving the employer of further concern after his premium is paid, and placing well guarded

plants under much the same burdens as those which have no safeguards. However, one great advantage of our federal system is that we have some fifty state laboratories working out experiments in government and political economy. From fifty laboratories one must expect a good many smells and a few explosions.

For the United States Steel Corporation, we feel some pride in the fact that before a single state had established workmen's compensation we had put it into effect among two hundred thousand employes. For nearly two years every man among them has known that, if he should be injured, he would receive relief, even though his own fault caused the accident. The exact amounts and all the details of this relief regardless of legal liability were printed and distributed among the men in thirteen different languages. This plan of voluntary accident relief was authorized and put into effect, notwithstanding the knowledge that it would add half a million dollars annually to the Corporation's expenditures arising from work accidents and that it would probably hasten the adoption of workmen's compensation in this country.

In the matter of work accidents, an ounce of prevention is worth ten pounds of cure—because there is no cure. Therefore accident prevention is more important than attempted compensation to men injured and the families of men killed, whether from the standpoint of humanity or the standpoint of social and business efficiency. Only by preventing accidents can employers preserve to their employes the life and health for which there is no price and save for their stockholders a cost which does not compensate.

Five years ago the mills, mines and plants of the United States Steel Corporation were not behind their neighbors in the prevention of work accidents. They carried no casualty insurance, and were correspondingly concerned in the avoidance of accidents. Each subsidiary company had its own casualty department striving to deal with this problem; yet in the last five years the serious accidents among those companies have been reduced to one-half their former number. In one company, employing thirty thousand men, the serious accidents have been

reduced to one-quarter the former annual number. In terms of two hundred thousand workmen, this means nearly three thousand men a year saved from injury or death. I suppose the reason I have been asked to tell you how this has been done is because I have watched it done and have given such assistance as I might to the men who have done it.

Nearly six years ago, under the guidance of Mr. Charles MacVeagh, all the men employed in casualty matters for our subsidiary companies were brought together, annually or oftener, for discussion of the problems arising from work accidents. Out of these meetings grew the United States Steel Corporation Safety Committee. It is composed of seven of the casualty managers for the chief subsidiary companies. A representative of the United States Steel Corporation acts as its chairman. The committee meets once each quarter and spends two or three days in its deliberations. In some detail its work is as follows:

(1) It receives reports of all serious accidents, considers their circumstances, ascertains their causes, and suggests possible means to prevent the recurrence of any more accidents of the same sort.

(2) It serves as a clearing house for all sorts of information concerning the discovery of fresh sources of danger, the development of new safety devices, and the experience of companies which have tried different methods of meeting common problems. All these matters are discussed and complete information is distributed throughout the organization by photographs, blueprints and descriptions.

(3) The safety committee sends to all the mills, mines and plants independent inspectors responsible only to the committee and chosen from some company which maintains rivalry with the plants whose mills are under inspection. These inspectors criticize everything which they consider unsafe and commend all effective safeguarding. They report directly to the safety committee. The recommendations of these inspectors are considered by the committee and, if approved, are sent to the company concerned with request for a report in thirty days showing what has been done about them. In the rare cases of disagreement be-

tween the inspectors and the plant officials, members of the safety committee make a personal investigation. In three years these inspectors of the committee made seven thousand recommendations from important matters such as building a thirty thousand dollar subway under railroad tracks to details such as washing the windows of a shop. Of these seven thousand recommendations, all but four hundred were immediately carried out by the companies concerned.

(4) At intervals the safety committee publishes a bulletin of effective safety devices and methods of preventing accidents, which is distributed among the foremen, master mechanics and all others responsible for the safety of the mills.

One of the most valuable methods thus established throughout the organization after trial by a single company is the method of having all plans for new construction, all drawings and orders for machinery "checked for safety." In every drafting room one man is delegated to make sure that provision has been made for safety devices and all dangerous features avoided in the preparation of plans for machinery and construction. No new machinery will be ordered or old machinery reconstructed unless the plans and specifications bear an endorsement which shows that they have been examined from the standpoint of safety to the workmen. Without such endorsement they will not be passed by the purchasing or other operating departments. This has been of great assistance in safeguarding the mills and has also saved much expense, because machinery which can be equipped with safety devices readily enough when built can be safeguarded afterward only at great trouble and expense.

In any campaign to increase the safety of industrial plants the workmen themselves must be interested and enlisted. Attempts to safeguard workmen without enlisting their own interest and endeavors would be about as successful as saving the souls of sinners who are satisfied with themselves. In the United States Steel Corporation subsidiary companies many different methods of interesting and enlisting the workmen have been tried with success:

(1) Over the mill gates by which the men enter some of the

companies have placed large signs, illuminated at night, with admonitions such as, "Help to prevent accidents"—"Look out for the other man; you may hurt him"—"It pays to think before you act." Every few weeks the wording of these signs, which are printed in several languages, is changed to direct attention to some new aspect of the campaign for safety.

(2) Many of the companies print in red ink on their pay envelopes little sermons on safety. I have in my hand three which read: "Use safety devices provided; don't take a chance."—"Always bend nails down before throwing boards aside. Serious injuries may result from stepping on protruding nails."—"It is your personal duty to see that all safeguards and signs installed to promote safety are always in good condition and to report all dangers promptly to your foreman or superintendent. The prevention of accidents is one of your most important duties."

(3) Everywhere inside the steel mills signs and signals indicating possible sources of danger remind the men of the concern for their safety. One of the most interesting of these signs is that devised for dangerous electrical appliances. It is expressed in a universal language intelligible alike to all nationalities and to men who cannot read a word of any language. It is very effective.

(4) Some of the companies offer prizes for suggestions for new safety devices, and hold prize competitions for the best answers to questions asking how safety may be promoted.

(5) Some of the companies have organized in each plant safety committees of foremen and of ordinary workmen. Membership in these committees changes frequently, so that in time a large number of the workmen will have served on the committees. They make inspections at intervals which vary from once a week to once a month, and the men are allowed from their regular duties whatever time is required for their services on the committees. Members and former members of the committees wear small insignia to show that they belong to the general safety organization. All the men who have served on these committees have been taught to look for dangers and to do their best to eliminate them. They know their suggestions



will be received and acted upon, and have become fellow-workers with their employers, permanently enlisted in the efforts for safety.

In this campaign for the prevention of accidents and similar endeavors to improve the condition of its workmen the United States Steel Corporation spent during the eighteen months ending June 30, 1911, about a million five hundred thousand dollars. This work requires the whole or a substantial part of the time and labor of nearly one hundred men. And it has received the careful and stimulating attention of the highest executive officers of the United States Steel Corporation and its subsidiary companies.

No ordinary employer could have conducted quite such a campaign, although any employer can do many of the specific things I have mentioned. This sort of thing requires organization. If you ask me what has contributed most to its success, I answer without hesitation, the tremendous momentum of a great, effective organization. I have seen this movement, supported by such far-sighted, broad-minded men as Judge Gary, Mr. Farrell, and the presidents of the subsidiary companies, acting under authority of the finance committee, attain in a few years a momentum which will presently bring every mill up to the standards of the most carefully safeguarded mills and will constantly raise the standards even of our best mills. I believe the highest benefit of human organization, whether in armies, churches or industries, is this momentum given to any improvement in methods which sweeps along even those who at first doubt and are half-hearted. It lifts every man to efforts a little beyond his best, and it accomplishes what the mere aggregate efforts of any number of individuals would have left unattained and impossible.

In the industrial organization of our country this is a time to see clearly and to think straight; to discard theories and to recognize facts. Our country is facing the question whether it will disorganize our industries by disintegrating them when we are daily reaping the benefits of their organization. Ask any competent investigator and I believe he will tell you that the most dangerous mills in this country today are those of the small

employers. Watch the opposition to such legislation as workmen's compensation and see whether it does not come chiefly from the small employers. I do not say this in condemnation, —they do the best they can with their small capital and scant organization and constant struggle—but I believe you will find that the great advances in prevention of accidents and the adoption of workmen's compensation have been attained largely through the present attitude and assistance of the great employing corporations.

In the United States Steel Corporation there is no thought that we are anywhere near the goal of our desire in accident prevention. We aspire sometime to say: "We have practically done away with that portion of our accidents which were due to the fault of the employer. We have trained our employes to eliminate almost all of those accidents which were due to the faults of the employes. We have advanced a long way toward the avoidance of that remaining portion of accidents for which nobody was to blame." If this movement were to have any motto—and mill men are not much given to mottoes—I would suggest to the men who are doing this work a line from Shakespeare which I have quoted elsewhere: "Out of this nettle, danger, we pluck this flower, safety."